PATENT SPECIFICATION

Application Date: Aug. 20, 1938. No 24597/38. **517,242**

(Patent of Addition to No. 474,100: dated Aug. 12, 1936.)

Complete Specification Left: Aug. 19, 1939.

Complete Specification Accepted: Jan. 24, 1940.

PROVISIONAL SPECIFICATION

Improvements in Knife Sharpeners

I, JAMES CHANTRY, of 23, Kenbourne Road, Sheffield, 7, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to knife sharpeners and is an improvement in or modification of the invention described in my prior Letters Patent No. 474,100 wherein sharpening elements carrying sharpening members intersect or overlap each other in such a manner as to form an angle or V through which the blade of a knife is adapted to be drawn in contact with the sharpening members, the sharpening elements being so mounted that they are movable towards and away from each other in an arcuate path in parallel planes under the action of springs or other resilient means, the functioning angle or V formed by the sharpening members remaining substantially constant during movement of the sharpening elements and the path of such angle or V being rectilinear.

The object of the present invention is to provide alternative constructions employing a less number of working parts with a consequent simplification of the construction of the device.

One improvement according to the present invention resides in the feature that the sharpening members are provided with curved faces of such a contour and themselves, or with their sharpening elements which carry them, mounted for movement against the action of a spring or springs, each about a single pivot so that the angle or V formed by the curved faces of the sharpening members remains substantially constant throughout movement about the said pivots.

Where the sharpening members are carried by sharpening elements, they may be fixedly or rotatably accommodated in holders adapted to be readily attachable to, and removable from, the sharpening elements. Such a holder may, for example, slidably fit upon the sharpening elements by means of resilient jaws forming part of the holder or incorporated in the structure thereof.

Springs anchored at suitable points to a frame may be connected one to each sharpening member or each sharpening element as the case may be intermediate of its pivoted end and its opposite end.

Alternatively a single spring may be connected by its ends to the sharpening members or the sharpening elements at a point intermediate of the ends thereof and the pivots, or it may be connected to the ends of the sharpening members or sharpening elements with the pivots located intermediate of the pivoted and free ends of said members or elements.

In another improvement according to the present invention the sharpening members are each rotatably carried in a holder in the form of an open sided sheath forming a clip adapted to fit slidably upon the sharpening elements, the ends of the sharpening members resting in bent over ends of the holder which serve as bearing brackets.

One form of knife sharpener made in accordance with this invention comprises a construction substantially the same as that described in my prior patent No. 474,100 except that the steels are rotatably supported by the bent over ends of holders which resemble open sided sheaths adaped to slidably fit on to supporting members which are connected by links to a base so as to be rocked with a parallel motion to impart the necessary movement to the steels.

In another form of knife sharpener the sharpening members are curved members which are mounted in a frame with adjacent free ends in overlapping fashion side by side and their opposite ends spaced apart and pivoted in adjacent planes directly to the frame, the said sharpening members being held by springs anchored to the frame and connected one to each sharpening member intermediate of its pivoted end and its free end, the arrangement being such that the sharpening members are relatively movable in arcuate paths about their pivots against the action of the springs by movement of a knife blade drawn through the angle or V and in contact with the sharpening members. The curved faces of the sharp-

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ening members which form the angle or V for contact of the knife blade are of such a contour that the angle or V remains substantially constant throughout the movement of the sharpening members.

The frame to which the sharpening members are pivoted may comprise like halves mounted in opposite relation upon a base, one sharpening member and its retaining spring being mounted in each member, a cover having an opening for the passage of the knife blade fitting over the frame and being detachably held to the base.

Alternatively, the frame may comprise a single unit secured to the base and provided with like integral members oppositely disposed in adjacent planes for carrying the sharpening members and springs.

In a modification of the immediately before described construction of knife sharpener employing pivoted sharpening members having curved faces, the pivoted section of each of the sharpening members is of increased thickness and has an outwardly directed U-bend whereby a slot is formed by means of which the two members are each loosely anchored about a pivot pin positioned transversely of a carrier accommodating the sharpening members, the latter being extended beyond the U-bend into ends which are spaced apart by a distance piece on the carrier, the said ends being connected together by a single spring against the action of which the sharpening members operate. The increased thickness of the sharpening members at their pivoted sections is so arranged as to provide for the operative ends of the members to overlap when the said members are positioned upon their pivots in opposite relation within the same plane. The carrier for the sharpening members is adapted to slidably fit in a frame to which a detachable cover having an opening for exposing the angle or V is provided.

In modifications of the before described constructions in which pivoted sharpening elements for carrying the sharpening members are employed, the curved faces thereof may be formed by providing the said sharpening members of elongated barrel shape fixedly or rotatably mounted in the sharpening elements, the latter being operated about their pivots against the action of the springs on manipulation of a knife blade in contact with the sharpening members.

Dated this 20th day of August, 1938.

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and 15, York Street, Sheffield, 1.

COMPLETE SPECIFICATION

Improvements in Knife Sharpeners

I, JAMES CHANTRY, of 23, Kenbourne Road, Sheffield, 7, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to knife sharpeners and is an improvement in or modification of the invention described in my prior Letters Patent No. 474,100 wherein sharpening elements carrying sharpening members intersect or overlap each other in such a manner as to form an angle or V through which the blade of a knife is adapted to be drawn in contact with the sharpening members, the sharpening elements being so mounted that they are movable towards and away from each other in an arcuate path in parallel planes under the action of springs or other resilient means, the functioning angle or V formed by the sharpening members remaining substantially constant during movement of the sharpening elements and the path of such angle or V being rectilinear.

The object of the present invention is to provide alternative constructions employing a less number of working parts with a consequent simplification of the construction of the device.

One improvement according to the present invention resides in the feature that the sharpening members are provided with curved faces of such a contour and themselves, or with their sharpening elements which carry them, mounted for movement against the action of a spring or springs, each about a single pivot so that the angle or V formed by the curved faces of the sharpening members remains substantially constant throughout movement about the said pivots.

Where the sharpening members are carried by sharpening elements, they may be fixedly or rotatably accommodated in holders adapted to be readily attachable to, and removable from, the sharpening elements. Such a holder may, for example, slidably fit upon the sharpening elements by means of resilient jaws forming part of the holder or incorporated in the structure thereof.

Springs anchored at suitable points to a frame may be connected one to each sharpening member or each sharpening element as the case may be intermediate of its pivoted end and its opposite end.

Alternatively a single spring may be connected by its ends to the sharpening members or the sharpening elements at a point intermediate of the ends thereof and the pivots or it may be connected to the ends of the sharpening members or sharpening elements with the pivots located intermediate of the pivoted and free ends of said members or elements.

In another improvement according to the present invention the sharpening members are each rotatably carried in a holder in the form of an open sided sheath forming a clip adapted to fit slidably upon the sharpening elements, the ends of the sharpening members resting in bent over ends of the holder which serve as bearing brackets.

Referring to the drawings filed herewith:—

Fig. 1 is a perspective view of one form of knife sharpener made in accordance with this invention.

Fig. 2 is a part sectional elevation of same.

Figs. 3 and 4 are elevation and plan respectively of the sharpening members and their mounting by means of which they are carried in the holder.

Figs. 5, 6 and 7 are views showing an alternative form of sharpening members and mounting capable of being fitted to the holder shown in Figs. 1 and 2.

Fig. 8 is a part sectional elevation of a modified form of sharpening members and holder therefor.

Fig. 9 is a vertical section of same.

Fig. 10 is an elevation of a further modified form of holder.

Fig. 11 is a plan of same, and

Fig. 12 is a detail view of the holder.

Like letters of reference refer to similar parts throughout the several views.

In Figs. 1 to 4 *a* and *b* are sharpening members having arcuate sharpening faces *c* at their upper ends which overlap to form a V formation having a curved angle while their lower ends resemble bent legs *d* by means of which they are pivotally mounted about pins *e* at the inside of the bend, the said pins being fixed to a carrier *f*. The feet of the sharpening members are engaged by a single spring f^1 whereby a pull is exerted upon the two sharpening members for the latter to operate with a scissor-like movement when a knife edge is drawn through the V. The carrier *f* is slidably fitted by its open ends engaging guides *g* in a holder comprising two like ends *h* carried on a base *j*. A cover *k* is fitted over the guides *g* between the two handles and is provided with a slot *m* for exposing the V of the sharpening members.

The carrier *f* is provided with a depending base f^2 which serves as a stop for the heel of each of the legs *d* of the sharpening members in one direction of their movement, as shown in Fig. 2, while a shoulder f^3 on each leg also acts as a stop for the sharpening members in the opposite direction.

In Figs. 5, 6 and 7 the sharpening members *a*, *b* are rotatably mounted in clips *n* which are slidably and removably fitted to carriers *o*, the lower ends of which are of increased cross section to provide faces *p* each face being adapted to act as a stop to limit downward movement of the other sharpening member by reason of its carrier *o* contacting with the face *p*.

In Figs. 8 and 9 the sharpening members *a*, *b* are of double arcuate form and each pivoted at one end *q* in a recess *r* provided at the lower end of two like frame members r^1 each having a recess r^2 accommodating a spring r^3 anchored at r^4 to the frame members and to the sharpening members intermediate the ends thereof. The frame members r^1 are also provided with recesses r^5 at the opposite sides to the recesses r^2, the recesses r^5 accommodating the free movable ends of the sharpening members *a*, *b*. Shoulders r^6 formed by the recesses r^5 limit downward movement of the sharpening members and shoulders r^7 formed by the recesses *r* limit their upward movement. The two frame members are secured to a base *s* and a handle *t* is screwed into one of the frame members. The cover *k* slidably fits over the frame members.

In Figs. 10, 11 and 12 somewhat similar forms of sharpening members *a*, *b* to those in Figs. 1 to 4 are employed but the holder comprises two like members *v* adapted to fit together by pin and lug engagement (not shown) and each provided with integral base portions *w* which, when the two members are assembled, form the base of the device. In this construction the sharpening members *a*, *b* are pivoted one to each member *v*, the sharpening member *a* being pivoted to the one member *v* alongside an integral distance piece *x* and the sharpening member *b* being pivoted to the other member *v* alongside a similar integral distance piece *z*. These distance pieces have such a contour that a shoulder 2 is formed upon each one to act as a stop to the downward movement of the sharpenging members *a*, *b* while a small integral projection 3 on each member *v* acts as a stop to the upward movement of the

sharpening members.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The improvement in or modification of the invention of my prior patent No. 474,100 which consists in the provision that the angle or V formed by the sharpening members is of curved formation.

2. A knife sharpener according to claim 1 wherein the sharpening members have arcuate sharpening faces.

3. A knife sharpener according to claims 1 and 2 wherein the sharpening members have curved faces throughout their length.

4. A knife sharpener according to the preceding claims wherein the sharpening members are rotatable on their axes.

5. A knife sharpener according to the preceding claims wherein the sharpening members are removably carried upon the sharpening elements.

6. A knife sharpener according to the preceding claims characterised in that the sharpening members or elements are each pivotally mounted and their ends remote from their sharpening faces connected together by a spring.

7. A knife sharpener according to claims 1 to 5 inclusive, characterised in that the sharpening members or elements are each pivotally mounted and each movable against the action of a spring connected therewith intermediate of its ends.

8. A knife sharpener according to claim 6 wherein the sharpening members or elements are pivoted intermediate of their ends.

9. A knife sharpener according to claim 7 wherein the sharpening members or elements are pivoted at their ends.

10. A knife sharpener according to the preceding claims characterised in that the sharpening members or elements are accommodated in a holder comprising like halves to which the said members or elements are secured.

11. A knife sharpener according to the preceding claims and including a holder comprising two like portions, the sharpening members or elements being pivotally mounted one in each portion.

12. A knife sharpener constructed, arranged and adapted to operate substantially as described with reference to and as illustrated in Figs. 1 to 4 or Figs. 5 to 7, or Figs. 8 and 9 or Figs. 10, 11 and 12 of the accompanying drawings.

Dated this 19th day of August, 1939.

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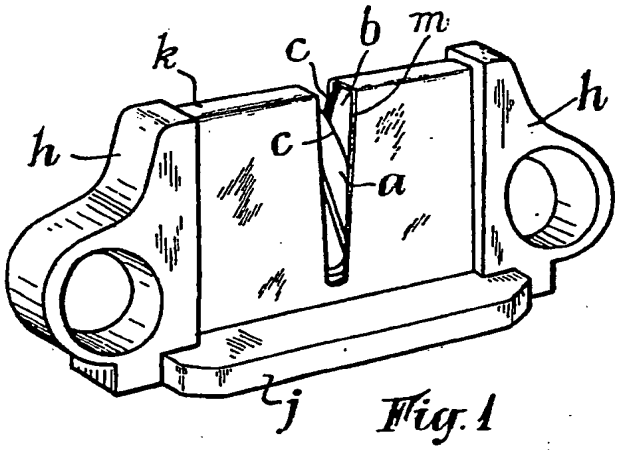

Fig. 1

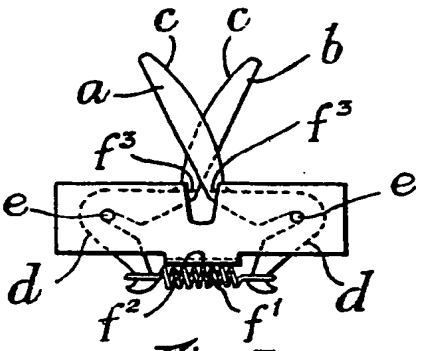

Fig. 3

Fig. 4

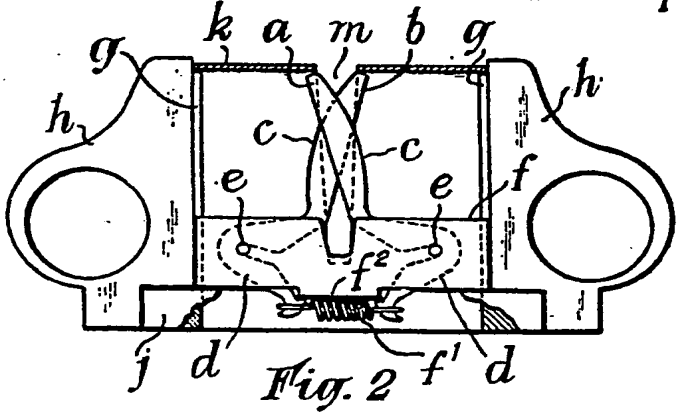

Fig. 2

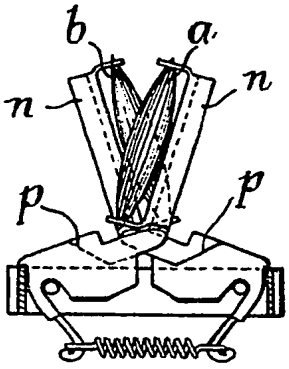

Fig. 5

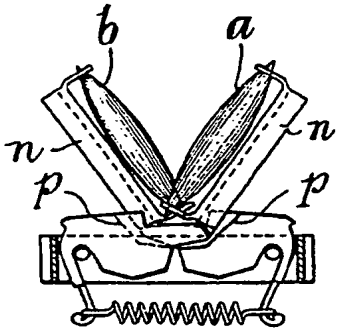

Fig. 6

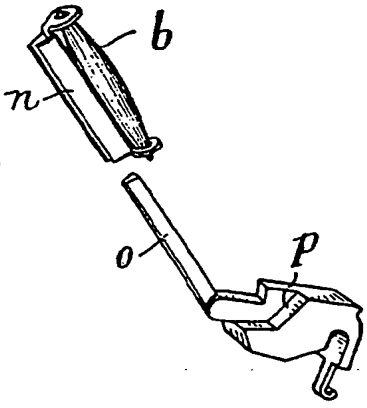

Fig. 7

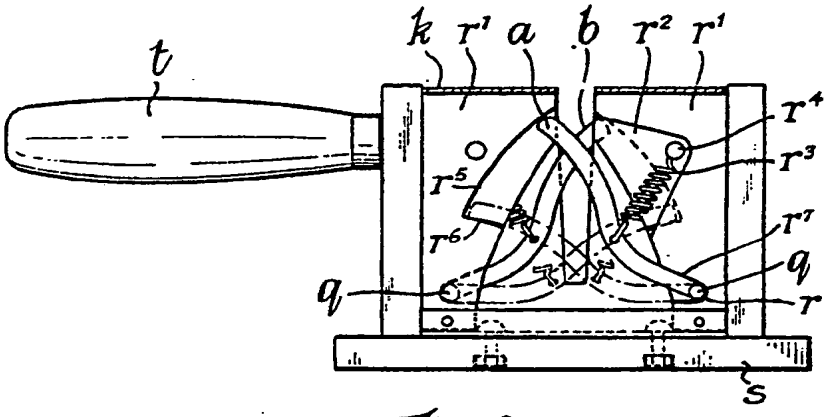

Fig. 8

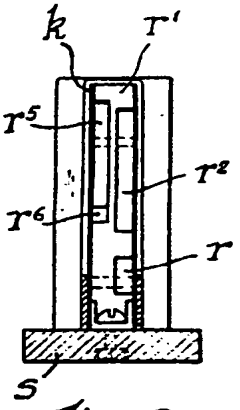

Fig. 9

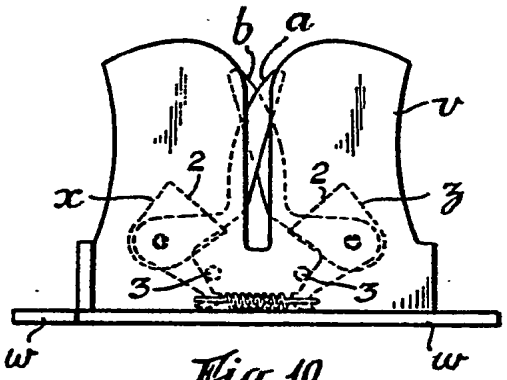

Fig. 10

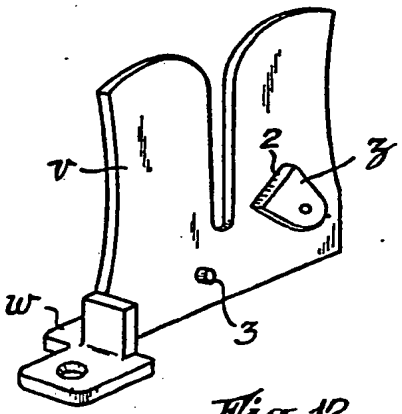

Fig 12

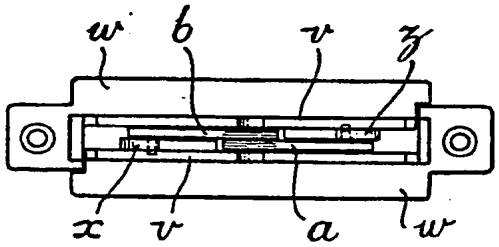

Fig. 11

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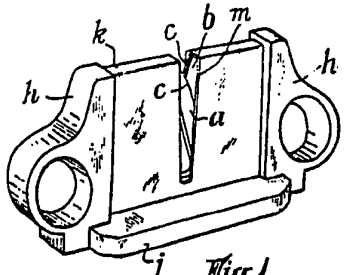


Fig. 1

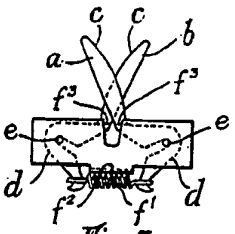


Fig. 3

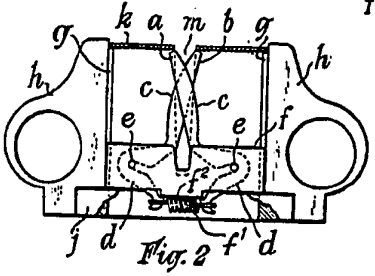
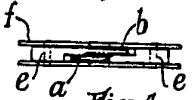


Fig. 2



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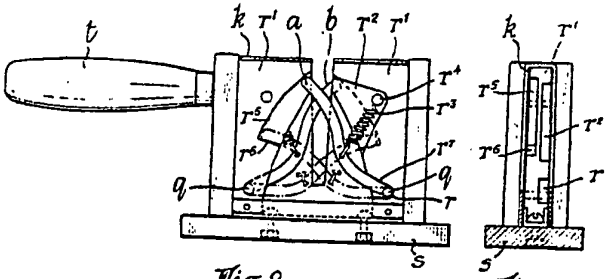

Fig. 8

Fig. 9

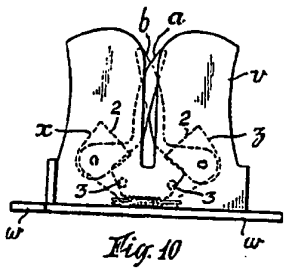

Fig. 10

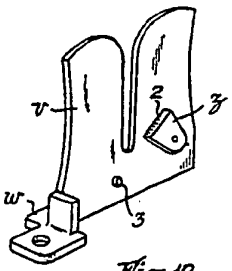

Fig 12

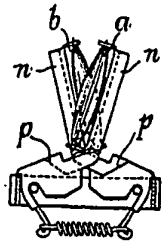

Fig. 5

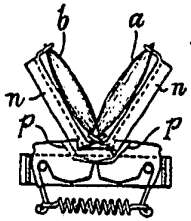

Fig. 6

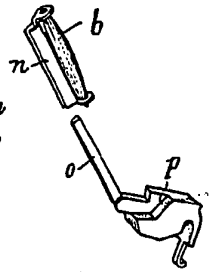

Fig. 7

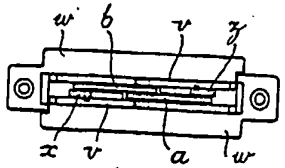

Fig. 11

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